

IN THE SPECIFICATION

Please replace the paragraph beginning at page 6, line 11, with the following rewritten paragraph:

--To describe a portion of the foundation structure incorporated in the foundation of the present invention, reference is now made to Figures 1, 2 and [3] 2A which are taken from my prior patents. In these Figures, the numeral 10 generally designates the pier foundation. The foundation 10 includes inner and outer upstanding corrugated metal pipe (CMP) sections 12 and 14. The outer section 14 is initially placed within a hole or excavation 16 formed in the ground 18 and rests upon the bottom of the excavation 16. The inner section 12 is then placed and positioned within the excavation 16. The interior of the inner CMP 12 is partially back filled and the excavation 16 outwardly of the outer CMP 14 is partially back filled to stabilize the CMP sections generally in position within the excavation and relative to each other.--

Please replace the paragraph beginning at page 7, line 25, with the following rewritten paragraph:

--The PVC pipes 30 and other suitable tubing or isolating mechanism serve to allow bolts 20 and 21 to move relatively freely through the concrete after curing so as to allow post-tensioning of the elongate ~~rods~~ bolts 20 and 21. In addition, rebar wraps 28 are used and secured to the tubes 30 associated with outer bolts 21 at approximately five foot intervals along the vertical extent of the

bolts 21 in order to maintain the bolts longitudinally straight during the pour of concrete.--

Please replace the paragraph beginning at page 9, line 9, with the following rewritten paragraph:

--When the concrete 68 has sufficiently hardened, it must be determined that the groove 70 is level . If groove 70 is not level, a coating of high compression hardenable grout [82] should be placed within the groove 70 to achieve a levelness for the tower base. Further, even if groove 70 is level, it may be desirable to place grout [82] in the groove 70 as illustrated in Figure 8 of my Patent No. 5,586,417. The nuts 44 are removed or threaded downwardly on the bolts 20 and 21 at least 3/4 inch. A tower (not shown) to be supported from the foundation 10 is thereafter lowered into position with the upper exposed ends of the bolts 20 and 21 upwardly received through suitable bores formed in the inner and outer peripheries of the heavy annular plate or base flange of the tower and the lower lug defining portion of the base flange seated in the groove or grout trough 70. Initially the upper nuts 42 are again threaded down onto the upper ends of the bolts 20 and 21 and preferably torqued to about 50 foot pounds. The nuts 42 are thereafter sequentially torqued (in a predetermined pattern of tightening) preferably to about 600 foot pounds which places each of the bolts 20 and 21 under approximately 40,000 pounds tension at approximately 1/3 the stretch limit of the bolts 20 and 21.--

Page 10, after line 2, insert the following paragraph:

--As illustrated in Figure 1 and as described in my U.S. Patent No. 5,586,417, column 8, in lines 37-43, the backfill within the inner pipe 12 may be completed to substantially ground level and provided with a poured concrete cap 86. The cap 86 may be sloped toward the center thereof and provided with a draining conduit 88, and a conduit 90 for electrical conductors (not shown) also may be incorporated in the foundation 10.--

Please replace the paragraph beginning at page 11, line 22, with the following rewritten paragraph:

--The foundation of the present invention reduces time, and reduces cost by allowing excavation by conventional backhoes and/or ~~truck~~ track excavators. Further, the tensionless pedestal section can be assembled and poured at a fabrication yard and shipped as a precast component to the foundation site. The corrugated metal pipe (CMP) forms provide reinforcing steel and establish a boundary for the concrete pour. The bolt holes in the CMP provide support and positioning for the horizontal radial arrangement of the laterally extending bolts in the spread section, along with eliminating the need for temporary perimeter forms and reinforcing steel supporting chairs and blocks. The foundation may be poured continuously (monolithically) or sequentially, first the perimeter wall, then the spread section and finally the pedestal section. Alternatively, the pedestal section can be poured first, then the perimeter wall and finally the spread section in two separate pours.--

Please replace the paragraph beginning at page 19, line 19, with the following rewritten paragraph:

--Figure 3 is a side elevational view of an assembled wind turbine and supporting tower mounted on a perimeter weighted foundation of the present invention, shown partially in section;--

Please replace the paragraph beginning at page 20, line 4, with the following rewritten paragraph:

--Figure 5 is a vertical sectional view illustrating a modified form of the perimeter weighted foundation of Figure 4 with the spread section including a depending shoulder on its bottom surface and the perimeter wall section positioned in an excavated circular trench extending below the bottom of the pedestal section and excavated soil backfilled on top of the spread section and within and surrounding the pedestal section;--

Please replace the paragraph beginning at page 21, line 9, with the following rewritten paragraph:

--Figure 10 is a plan view of a pattern of the bolts in the perimeter weighted foundation of Figure 8 including the vertically extending bolts located in the pedestal section and the upper layer of horizontal bolts extending radially through the CMPs of the pedestal section, outwardly ~~across~~ through the spread section and through the CMPs of the perimeter wall section, as well as the concentric circles of tendons interconnecting the radially extending bolts in the spread section.--

Please replace the paragraph beginning at page 22, line 20, with the following rewritten paragraph:

--As shown in Figure 4, the pedestal section 102 is formed between an inner CMP 122 and an outer CMP 124. Similar to the pedestal section 102, the perimeter wall section 106, is formed between an inner CMP 126 and an outer CMP 128. Interconnecting the pedestal 102 and the perimeter wall section 106 is a spread section 104. The spread section 104 extends from the outer wall of the outer CMP 124 of the pedestal section ~~past~~ to the outer CMP 128 of the perimeter wall section 106 to the side wall 129 of the excavation. Thus, the spread section 104 ties together the bottom of the pedestal section 102 and the top of the perimeter wall section 106 in forming the expanded base 103 for the pier pedestal 102.--

Please replace the paragraph beginning at page 23, line 5, with the following rewritten paragraph:

--With specific reference to Figures 4 and 5, extending vertically through the pedestal section 102 are two concentric rings of anchor bolts 130 and 132. The pedestal section 102, including the rings of anchor bolts 130, 132 extending between grout trough 134 or tower base ~~135~~ ~~(Figure 5)~~ and anchor or embedment ring 136, can be ~~assembled as a~~ precast or poured in situ. When the top of the pedestal section is designed to extend above the ground surface, such as shown in Figure 5, a removable form ring 133 is typically used to hold the concrete above the ground when the pedestal section is poured in situ. As stated previously, the pedestal section of the present invention is constructed in accordance with the teachings of my prior patents

including high load post-tensioning of the bolts 130 and 132 after the concrete has hardened and cured.--

Please replace the paragraph beginning at page 25, line 15, with the following rewritten paragraph:

--The bolts 152 extend horizontally until reaching an upper edge or lip portion 162 of inner CMP 126 of the perimeter wall section 106. After passing over the lip portion 162, the bolts 152 are bent to extend downwardly and form ~~vertically~~ vertical extensions 158 of bolts 152. Vertical extensions 158 are not isolated by a sleeve or the like and are intended to bond with the subsequently poured concrete forming the perimeter wall section 106 between the inner and outer CMPs 126, 128. Bolt extensions 158 aid in strengthening the concrete of the perimeter wall section 106 and in tying together the perimeter wall section 106 to the spread section 104 in forming the enlarged base 103 in accordance with the present invention.--

Please replace the paragraph beginning at page 27, line 7, with the following rewritten paragraph:

--The assembly of the perimeter weighted foundation 100 according to the present invention will be described with reference to Figure 5 and a typical installation having the above described dimensions. In Figure 5, an excavation generally designated by reference numeral 170 is dug with a diameter of approximately 32 feet and a depth of approximately 7.5 feet. A central section 141 of the excavation 170 is dug down about another foot, thus leaving a raised perimeter ~~section~~ dirt ring or berm 137 having a height of

about one foot. The perimeter dirt ring 137 has an inner diameter [141] which ~~form~~ forms shoulder 135 that is about 1-2 feet larger than the outer diameter of the pedestal section 102. The depth of the central section 141 is approximately equal to the height of the pedestal section 102, or as shown in Figure 5, slightly less than the height of the pedestal section if the top of the pedestal section is to extend above ground level. As shown in Figure 5, the ~~width~~ outer diameter of the excavation 170 at wall 129 approximates the outer diameter of the perimeter wall section 106. After the initial circular excavation 170, an annular trench or ring 172 is dug to a depth of approximately 4.75 feet, with an inner diameter of approximately 24 feet and an outer diameter of 32 feet, to accommodate the perimeter wall section 106.--

Please replace the paragraph beginning at page 28, line 1, with the following rewritten paragraph:

--The exterior and interior CMPs 128 and 126 are placed into the annular excavation 172. A sand cement slurry 174 is preferably placed along the exterior sides of CMPs 126 and 128 ~~to the top of~~ within the walls 176 and 180 to the top of trench 172 to provide outside lateral support to the CMPs 126 and 128. The CMPs 122, 124 of the pedestal section 102 are then placed on the bottom [141] of the central section 141 of excavation 170 and properly aligned and plumbed centrally within CMPs 126, 128. The additional supporting structure of the pedestal section, including tensioning anchor bolts 130, 132 and other structure, as described in my prior patents, is assembled.--

Please replace the paragraph beginning at page 28, line 12, with the following rewritten paragraph:

--Then, the lower layer of bolts 154 are placed in position in the spread section 104, extending through the CMPs 122, 124 of the pedestal section and over the edge 162 of CMP 126 and downwardly into the perimeter wall section 106. The circular steel tendons 160 are placed on top of the horizontally extending portion 154 of bolts 152 and secured at their cross-over intersections. The top ~~layers~~ layer of bolts 140 are then placed into position by securing them to extend through the CMPs 122, 124 of the pedestal section 102 and the exterior CMP 128 of the perimeter wall section 106.--

Please replace the paragraph beginning at page 29, line 24, with the following rewritten paragraph:

--As may be seen from Figure 2, the ~~back-fill~~ backfill within the inner pipe 12 may be completed considerably below the surface of the ground 18. In such instance, the interior of the upper portion of the pipe 12 may be used to store maintenance equipment, electrical control equipment or other equipment, in which case the lower end of the tower will be provided with a door opening. On the other hand, the back fill within the inner pipe 12 may be completed to substantially ground level and provided with a poured concrete cap or floor 86, as shown in Figure 1. The cap or floor 86 may be sloped toward the center thereof and provided with a drainage conduit 88 and conduit 90 for electrical conductors also may be incorporated in the foundation 10.--

Please replace the paragraph beginning at page 31, line 1, with the following rewritten paragraph:

--The three sections of the foundation 200 may be pre-cast and delivered to a remote site. Alternatively, the same concrete pour order as was described with respect to Figure 5 may be followed. After supporting the CMPs 208,210 with cement sand slurry backfill, the perimeter wall section 206 and spread section 204 are poured, followed by a pouring of the pedestal section 202. Moreover, each of the perimeter wall section 206, the spread section 204 and the pedestal section 202 could be poured separately, if desired. After the concrete for all three sections has hardened and cured, all of the vertically extending bolts 220, 222 in the pedestal section and the horizontally extending bolts 212, 214 in the spread section are post-tensioned to the desired heavy unit compressive loading by threading the tensioning nuts on the bolt ends. The perimeter weighted foundation 200 has all of the advantages of the perimeter weighted foundation 100, as described with reference to Figures 5 through [8] 7.--